

What is claimed is:

1. A method for enhancing aqueous humor flows outwardly from an anterior chamber of a human
5 eye to decrease intraocular pressure (IOP), the method comprising modifying a property of a targeted soft tissue
volume in and about aqueous outflow pathways to increase fluid flow rates therethrough.

2. A method for enhancing aqueous humor flows as in claim 1 wherein the expanding step
includes implanting at least one implant body in soft said tissue volume in a non-extended shape and extending the
10 implant to an extended shape.

3. A method for enhancing aqueous humor flows as in claim 2 wherein the implanting step
includes providing the at least one implant body of a shape memory material wherein its memory shape is the
extended shape.

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4. A method for enhancing aqueous humor flows as in claim 2 wherein the implanting step
includes providing the at least one implant body of a shape memory polymer (SMP) having a memory extended
shape and a temporary non-extended shape.

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5. A method for enhancing aqueous humor flows as in claim 2 wherein the implanting step
includes providing the at least one implant body of a polymer having a memory extended shape and a non-extended
shape being constrained by a surface constraining portion.

6. A method for enhancing aqueous humor flows as in claim 2 wherein the extending step includes allowing a thermal stimulus to cause the at least one implant body to move to said extended shape.

5 7. A method for enhancing aqueous humor flows as in claim 6 wherein the thermal stimulus is provided by body heat.

8. A method for enhancing aqueous humor flows as in claim 6 wherein the thermal stimulus is provided by energy from an external source selected from the class consisting of light energy sources and inductive heating sources.

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9. A stent for treating ocular hypertension comprising a stent body at least partly of a shape memory material capable of a temporary non-extended shape for introduction and a memory extended shape for applying retracting forces on tissue, the stent body dimensioned for implantation in the region of the aqueous outflow pathways proximate the angle of the anterior chamber.

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10. A stent as in claim 9 wherein the shape memory material is a shape memory polymer (SMP).

11. A stent as in claim 9 wherein the shape memory material is a nickel titanium alloy.

20 12. A stent as in claim 9 wherein the shape memory material defines flow channels extending at least partly therethrough.

13. A stent as in claim 9 wherein the shape memory material is fluid permeable.

14. A stent as in claim 9 wherein the shape memory material is a SMP foam.

5 15. A stent as in claim 9 wherein the shape memory material is a soft lithography microfabricated
body.

16. A stent as in claim 9 wherein the stent body carries surface relief elements.

10 17. A stent as in claim 9 wherein the stent body is at least partly bioabsorbable.

18. A stent as in claim 10 wherein the SMP has a polymer portion that defines a transition
temperature at or below about 37° C. for permitting body temperature stimulus to its memory extended shape from
its temporary non-extended shape.

15 19. A stent as in claim 10 wherein the SMP has a polymer portion that defines a transition
temperature above about 37° C. for cooperating with an external source for moving to its memory extended shape
from its temporary non-extended shape.

20 20. A stent as in claim 10 wherein the SMP carries a selected chromophore for cooperating with
a light energy source for allowing non-invasive change in the temperature of the SMP.

21. A stent as in claim 10 wherein the SMP carries a magnetic responsive composition for cooperating with an external inductive source for allowing non-invasive change in the temperature of the SMP.

22. An implantable device for treating glaucoma in a human eye comprising a stent for retracting
5 tissue about aqueous outflow channels of a human eye, the stent of at least one shape memory polymer composition.

23. An implantable device as in claim 22 wherein the stent defines a temporary non-extended shape and a memory extended shape for retracting said tissue.

10 24. An implantable device as in claim 22 wherein the stent is of a shape memory polymer composition is substantially transparent.

25. An implantable device as in claim 22 wherein the stent has a form in its memory extended shape has at least one of threads, projections, ridges, spikes, undulations, convolutions, grooves, surface relief and
15 spiral portions.

26. A method for retracting soft tissue, the method comprising the steps of providing at least one SMP body capable of a first memory shape and a second temporary stressed shape that stores energy, implanting the at least one SMP body in the targeted tissue, and allowing a stimulus to move the SMP body to the first memory
20 shape from the second temporary shape thereby releasing the stored energy to retract tissue.

27. A method as in claim 26 wherein the stimulus is body temperature.

28. A method as in claim 26 wherein the stimulus is energy from an external source selected from the class consisting of light energy sources and inductive heating sources.

29. A method for modifying a property of targeted soft tissue region in a human subject,
5 comprising the steps of: providing a shape memory polymer (SMP) body in a shape that maintains therein reversible inelastic strains of greater than 20%; introducing the SMP body into the vicinity of said tissue region; and allowing a stimulus to release said inelastic strains in the SMP body to thereby apply forces that modify a property of said tissue region.

10 30. A method as in claim 30, wherein the property includes at least one of the properties in the class consisting of permeability, density, resilience, orientation, bulk and flexibility of said tissue region.

31. A stent for treating ocular hypertension in a human eye comprising a body of a shape memory polymer capable of reversible inelastic strains of greater than 20%.

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